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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,358	04/24/2001	Pieter Vermeulen	SEN-112	6566

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LUMEN INTELLECTUAL PROPERTY SERVICES, INC.
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EXAMINER	
NOLAN, DANIEL A	

ART UNIT	PAPER NUMBER
2654	6

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/842,358	VERMEULEN ET AL.	
	Examiner	Art Unit	
	Daniel A. Nolan	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 April 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 April 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

1. Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged. However, the provisional application upon which priority is claimed fails to provide adequate support under 35 U.S.C. 112 for claims 1-35 of this application.

The provisional application 60/199,292 fails to establish that the applicant had possession of specific claimed inventions due to lack of disclosure as required to be disclosed under 35 USC § 112(1) and/or enabled under 35 USC § 112(1) under MPEP 201.11 (A), which reads in part,

"The later-filed application must be an application for a patent for an invention which is also disclosed in the application (the parent or original nonprovisional application or provisional application); the disclosure of the invention in the prior application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See Transco Prods., Inc. v. Performance Contracting, Inc., 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994)."

The only issue in the instant application 09/842,358 application that reflects the provisional application is the feature of "client/server" architecture, and so will that be the only element considered to be granted priority by the Examiner in this action.

Information Disclosure Statement

2. The listing of references in the specification (at the end of page 3) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be

submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

3. The disclosure is objected to because the term *"simultaneously"* is not precisely accurate for the circumstances given and so would be subject to interpretation. Because the processed operations are done *sequentially* (page 5 lines 22-25), the results would not be available all at the same time that is required for the operations to be done *simultaneously*. The Examiner is proceeding with the understanding that the processing is to be done *"concurrently"*, "*independently*" or "*in the same operation*". Appropriate correction is required.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- Since the term *"simultaneously"* in the specification is objected to, corresponding changes are required of the claims.
- The Examiner is proceeding with the understanding that the word *"simultaneously"* should be read as *"concurrently, independently or in the same operation"* in claims 8 and 22.

5. The disclosure is objected to because of the following informalities:

- "*Concatenative*" is misspelled (line 10 page 3).

- *"Depends"* is misspelled (line 27 page 5).

Appropriate correction is required.

Claim Objections

6. Claims 5, 12, 15, 27 and 33 are objected to because of the following informalities:

- Claims 5, 12, 27 and 33 are subject to interpretation, since the *acoustical units that are stored are compressed* (page 5 line 2) and also are *compressed before being transmitted* (page 4 last line), the claims regarding compression are subject to interpretation as to whether the compression refers to the storage, transmission or both.

  The Examiner is proceeding with the understanding that claims 1, 9, 23 and 30 (lines 8, 6, 9 and 8, respectively) pertain to *transmission*.

- Claim 15 is subject to interpretation; as to whether the method "*selected from*" is determined by the selection method is determined by the *compression method.*

  The Examiner is proceeding with the understanding that this is not the case (that any basis of selection will satisfy the requirement) and that the claim should be read:

> *15. In a client machine, a text-to-speech synthesis method comprising:*
> *a) receiving compressed acoustic units corresponding to a normalized text from a server machine,* the *compressed acoustic units [being] having been*
> - *selected from a predetermined number of possible acoustic units and*
> - *compressed using a compression method selected in dependence on* the *predetermined number of possible acoustic units;*

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Kochanski *et al* & Matsumoto

9. Claims 1-4, 6-11, 13-14, 23-25, 28-29, 30-32 and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable in view of Kochanski *et al* (U.S. Patent 6,625,576 B2) in view of Matsumoto (U.S. Patent 5,673,362 A).

10. Regarding claims 1, 9 and 30, the invention for *performing text-to-speech conversion in a client/server environment* by Kochanski *et al* reads on every feature of

the claims for *text-to speech synthesis in a computer system comprising a server machine and a client machine* as follows:

- Kochanski *et al* (11 in figure 1 & column 4 lines 13-15) teaches the step of *(a) obtaining a normalized text;*
- Kochanski *et al* (claim 1 lines 43-46) reads on the step of *b) selecting acoustic units corresponding to* the *normalized text from a database accessible to* the *server machine,* the *database storing a predetermined number of possible acoustic units* (determined by the *cache manager* 55 in figure 5 – see column 12 lines 6-23)*;*
- Kochanski *et al* (550 & 52 in figure 5, *server→client*) reads on the step of *c) transmitting compressed acoustic units from* the *server machine to* the *client machine,* where the *compressed acoustic units are obtained by compressing* the *selected acoustic units using a compression method* (as taught from column 10 line 64 through column 11 line 2) *selected in dependence on* the *predetermined number of possible acoustic units;*

With respect to the final feature in the *client* machine of claim 1, Kochanski *et al* (with 17 figure 1 & by *synthesizing* in column 11 lines 59-63) reads on the feature of *in the client machine, concatenating* the *selected acoustic units.*

As to the singular feature of *client/server architecture* that is mentioned in the provisional application for domestic priority, the invention of Matsumoto for a *speech synthesis system in which a plurality of clients and at least one voice synthesizing server are connected to a local area network* reads on the feature of *a computer system comprising a server machine and a client machine* (2 & 1 in figure 1). It would have

been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Matsumoto to the device/method of Kochanski *et al* so as to allow clients that are not equipped with full speech conversion to receive voice data.

11. Regarding claims 2, 10 and 31; the claims are set forth with the same limits as claims 1, 9 and 30, respectively. Kochanski *et al* (15 & 16 in figure 1 with column 2 lines 49-52) teaches the feature of *generating prosody data corresponding to* the *normalized text and* (in depicting 22, 32 & 42 in figure 4, server→client) reads on the feature of *transmitting* the *prosody data from* the *server machine to* the *client machine,* where *step (d) comprises concatenating* the *selected acoustic units in dependence on* the *prosody data* (as with column 7 lines 32-36 & column 2 lines 49-52).

12. Regarding claim 3, the claim is set forth with the same limits as claim 1. Kochanski *et al* (column 2 lines 54-60 and column 12 lines 6-10) teaches the feature of *concatenating* the *selected acoustic units with at least one cached acoustic unit,* where the *cached acoustic unit is cached on* the *client machine* (560 in figure 5).

13. Regarding claims 4, 11 and 32; the claims are set forth with the same limits as claims 1 and 9, respectively. Kochanski *et al* (column 1 lines 1-15) reads on the feature of *normalizing a standard text to obtain* the *normalized text.*

14. Regarding claims 6, 13 and 34; the claims are set forth with the same limits as claims 1, 9 and 30, respectively. Kochanski *et al* teaches the feature where *parameters of* the *compression method are selected to minimize the amount of data transmitted between* the *server machine and* the *client machine for each possible acoustic unit* (as taught from column 10 line 63 through column 11 line 2).

15. Regarding claims 7, 14 and 35; the claims are set forth with the same limits as claims 6, 13 and 34, respectively. Kochanski *et al* teaches the feature where *parameters of* the *compression method are further selected to achieve a minimum quality for each possible acoustic unit* (see column 3 lines 32-48).

16. Regarding claim 8 as understood by the Examiner, the claim is set forth with the same limits as claim 1. Kochanski *et al* (in column 1 line 49-50 where the client operates independently of the server, or base station) teaches the feature where *steps (c) and (d) are performed simultaneously for sequential acoustic units* (as done in the operation of integrated components in figure 5 – see column 9 lines 25-48).

17. Regarding claim 23, Kochanski *et al* reads on the features of *a database of predetermined acoustic units* (25 in figure 4), *a server machine in communication with* the *database* (47 in figure 4) *for selecting ones of* the *acoustic units corresponding to a normalized text* (see column 4 lines 13-15) *and for generating prosody data corresponding to* the *normalized text* (with 22, 32 & 42 in figure)*; and a client machine in communication with* the *server machine for concatenating* the *selected acoustic units in*

dependence on the *prosody data* (with correspondence to 17 in figure 1 & with the *synthesizing* in column 11 lines 59-63);

Kochanski *et al* further reads on the features where the *server machine transmits compressed acoustic units to* the *client machine* (with 22, 32 & 42 in figure 4, 47→48), *and* where the *compressed acoustic units are obtained by compressing* the *selected acoustic units using a compression method selected in dependence on* the *predetermined acoustic units* (see column 10 lines 64-66).

18. Regarding claims 24 and 25, the claims are set forth with the same features as claim 23. The features of the claim are the same as those found in claims 3 and 4, respectively, and the claims are rejected for the same reasons.

19. Regarding claims 28-29; claim 28 is set forth with the same limits as claim 23 and claim 22 is set forth with the same limits as claim 23. The features of the claims are the same as those found in claims 6, 7 and 8, respectively, and the claims are rejected for the same reasons.

Kochanski *et al*, Matsumoto & Malsheen *et al*

20. Claims 5, 12, 15-17, 20-22, 27 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochanski *et al* in view of Matsumoto and further in view of Malsheen *et al* (U.S. Patent 4,979,216 A).

21. Regarding claims 5, 12, 27 and 33 as understood by the Examiner; the claims are set forth with the same limits as claims 1, 9, 23 and 30, respectively. Kochanski *et al* indicate (in column 11 lines 1-2) a caching address-offset shorthand notation that is a form of *compression* but neither they nor Matsumoto specify *compressed acoustic units stored in a database.* With the invention for *text to speech synthesis system and method using context dependent vowel allophones*, Malsheen *et al* (column 6 lines 9-14) read on the feature that the *possible acoustic units are compressed possible acoustic units, and* where the *compressed acoustic units are compressed before being stored in* the *database* (column 13 lines 60-68).

It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method and/or teachings of Malsheen *et al* to the device/method of Kochanski *et al* & Matsumoto in order that devices with limited memory and storage capacity may provide serviceable vocabularies.

22. Regarding claim 15, Kochanski *et al* (550 & 52 in figure 5, *server→client*) reads on the step of *a) receiving compressed acoustic units corresponding to a normalized text from a server machine,* the *compressed acoustic units being selected from a predetermined number of possible acoustic units and compressed using a compression method selected in dependence on* the *predetermined number of possible acoustic units* (column 10 lines 64-66).

Kochanski *et al* does teach the step of *concatenation* (column 2 lines 48-52, column 6 line 11) but neither he nor Matsumoto unequivocally teach *decompressing*

(see Kochanski *et al* column 1 lines 51-56). Malsheen *et al* teaches the steps of *decompressing* the *compressed acoustic units to obtain decompressed acoustic units* (with the *decoding* in column 12 lines 44-61)*; and* further teaches the features of step *c) concatenating* the *decompressed acoustic units* (with the *combining* of column 12 lines 66-68). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Malsheen *et al* to the device/method of Kochanski *et al* & Matsumoto so as to realize improved voice quality (see column 2 lines 33-46).

23. Regarding step 16, the claim is set forth with the same limits as claim 15. Kochanski *et al* (32-42 in figure 4, 47→48) reads on the step of *receiving prosody data corresponding to* the *normalized text from* the *server machine,* where (column 7 lines 32-35) reads on the feature of *concatenating* the *decompressed acoustic units in dependence on* the *prosody data.*

24. Regarding step 17, the claim is set forth with the same limits as claim 16. The features of the claim are the same as those found in claim 3 and the claim is rejected for the same reasons.

25. Regarding claim 18, the claim is set forth with the same limits as claim 16. Where Kochanski *et al* does not explicitly depict the client furnishing text to the server, the configuration of a *cell-phone* (column 2 line 38) reads on the feature of (the client) *transmitting a standard text corresponding to the normalized text to the server machine,*

which would have made it obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings to the device/method of Kochanski *et al* because the signal will originate from the client/terminal in the hands of the person user/speaker/operator.

26. Regarding claims 20-21 and claim 22 as understood by the Examiner; claim 20 is set forth with the same limits as claim 15, claim 21 is set forth with the same limits as claim 20, and claim 22 is set forth with the same limits as claim15. The features of the claims are the same as those found in claims 6, 7 and 8, respectively, and the claims are rejected for the same reasons.

Kochanski *et al*, Matsumoto, Malsheen *et al* & Lumelsky'780

27. Claims 19 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kochanski *et al* in view of Matsumoto and further in view of Malsheen *et al* and further in view of Lumelsky'780 (U.S. Patent 6,081,780 A).

28. Regarding claims 19 and 26; the claims are set forth with the same limits as claims 15 and 23, respectively. Neither Kochanski *et al*, Matsumoto nor Malsheen *et al* place the *normalization* operation in the client, or terminal, or telephone. The *prosody based authoring system* invention of Lumelsky'780 (150 in figure 2B) provides the configuration that reads on the feature of (the client) *normalizing a standard text to obtain a normalized text* (the client being the *authoring system* 101 in figure 1 including the speech analyzer figure 2A which in turn performs the text normalization 150 in figure

2B) *and transmitting* the *normalized text to* the *server machine* (150→165 in figure 2B). It would have been obvious to a person of ordinary skill in the art of speech signal processing at the time of the invention to apply the method/teachings of Lumelsky'780 to the device/method of Kochanski *et al*, Matsumoto & Malsheen *et al* so as to offload user-specific tasks from the server, making additional resources available that will allow the larger machine to handle more clients.

Conclusion

29. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Walker (U.S. Patent 6,510,413 B1) distributed synthetic speech generation.
- Lumelsky'672 (U.S. Patent 6,246,672 B1) single cast interactive radio system.
- Lautzenheiser *et al* (U.S. Patent 4412211 A) security test alerting and reporting system - introduces access code to validate test procedure and inhibit external alarms for test sequence annunciation.
- Neumeyer *et al* (U.S. Patent 6,055,498 A) method and apparatus for automatic text-independent grading of pronunciation for language instruction.
- Conkie (U.S. Patent 6,505,158 B1) synthesis-based pre-selection of suitable units for concatenative speech normalizes in server.
- Tel (U.S. Patent 5,943,648 A) speech signal distribution system providing supplemental parameter associated data normalizes in server.

30. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Daniel A. Nolan at telephone (703) 305-1368 whose normal business hours are Mon, Tue, Thu & Fri, from 7 AM to 5 PM.

If attempts to contact the examiner by telephone are unsuccessful, supervisor Richemond Dorvil can be reached at (703)305-9645.

The fax phone number for Technology Center 2600 is (703)872-9314. Label informal and draft communications as "DRAFT" or "PROPOSED", & designate formal communications as "EXPEDITED PROCEDURE". Formal response to this action may be faxed according to the above instructions,

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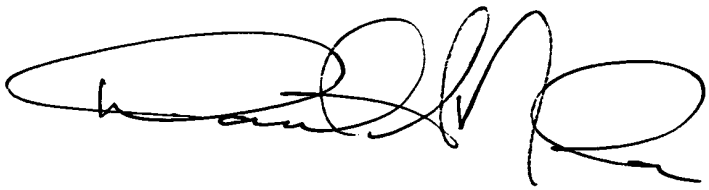
Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Technology Center 2600 Customer Service Office at telephone number (703) 306-0377.

Daniel A. Nolan
Examiner
Art Unit 2654

DAN/d
November 7, 2003



DANIEL NOLAN
PATENT EXAMINER